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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/807,050	03/22/2004	Chih-Neng Hsu		4102

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EXAMINER

WRIGHT, INGRID D

ART UNIT PAPER NUMBER

2835

DATE MAILED: 07/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/807,050

Applicant(s)

HSU ET AL.

Examiner

Ingrid Wright

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 May 2006.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8, 10-19, 22 and 23 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-8, 10-19, 22 and 23 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 5/17/06 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☒ Other: 2 Attachments.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-8,10,11-19,22 & 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over by Higdon et al. US 6148183 in view of Stopperan US 5428190. Note: See notation on attached fig. 2 & 5 of Higdon et al. for elements representing claimed limitations in the instant application.

With respect to claim 1, Higdon et al. teaches an electronic device (see, Abstract of Higdon et al) comprising a housing assembly (102) comprising a side wall (274) and printed circuit board (257) and board (262) received in the housing assembly (102); and a side key assembly (122) engaged with the side wall (274), and comprising: a key portion (206); a flexible panel (208) having domes formed thereon and corresponding to the key portion (206); a circuit track (236) on an electrical panel (210) and a printed circuit board (257) having conducting tracks (see, col. 4, lines 9-24) formed thereon, the printed circuit board (257) being fixed and electrically connected with the electrical panel (210), wherein the flexible panel (208) is arranged between the key portion (206) and each dome corresponds to an end of at least one respective of the conducting tracks (263), when the key portion (206) is depressed, it exerts a force and presses the flexible panel (208), and in response this pressure one of the domes (see, notation on attached fig. 2 of Higdon et al.) on the flexible panel (208) deforms toward the printed circuit board (257) to actuate the corresponding at least one conducting track (263) on the printed circuit board (257) (see, col. 4, line 14), but is silent as to specifically a flexible printed circuit board having tracks.

Stopperan teaches two rigid boards (75) comprising flexible jumpers coupled with an electrical panel (100).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the boards of Stopperan in the invention of Higdon et al., in order to provide an alternate equivalent means of electrical connectivity between the two rigid panels (210) and (257) of Higdon et al. over the elements (246-250) of Higdon et al.

With respect claim 2, Higdon et al. teaches conducting tracks (263) (see, col. 4, lines 1-24) formed on the printed circuit board (257) and a circuit track (236) on an electrical panel (210).

With respect to claim 3, Higdon et al. teaches the printed circuit board (257) coupled with the electrical panel (210) and a circuit track (236) coupled to the electrical panel (210).

With respect to claim 4, Higdon et al. teaches the key portion (206), which comprises a body portion (see, fig. 2), a user interface (see, fig. 2) extending from the body portion (see, fig. 5) and a contact portion extending from an inner side of the user interface (see, fig. 2).

With respect to claim 5, Higdon et al. teaches the side wall (274) comprises a plurality of stop walls (see, fig. 2), and a receiving space (see, fig. 2) formed therebetween.

With respect to claim 6, Higdon et al. teaches a stop wall (see, fig. 2), which has a "L" shape, and comprises a long arm (see, fig. 2) and a short arm (see, fig. 2), the long arm (see, fig. 2) is parallel to the

side wall (274), and the short arm (see, fig. 2) extends from a bottom wall of the housing (102) near the side wall (274).

With respect to claim 7, Higdon et al. teaches the side wall (274) that has a recess (see, fig. 2) which responding to a stop wall (see, fig. 2) and a width of the recess (see, fig. 2) which responds with the stop wall (see, fig. 2), and a width of the recess (see, fig. 2) is shorter than a distance of the two short arms (see, fig. 2).

With respect to claim 8, Higdon et al. teaches the key portion (206), the flexible panel (208) and the electrical panel (210) are placed in the receiving space (see, fig. 2), the side wall (274) blocks the body portion (see, fig. 2) of the key portion (206) and the user interface (see, fig. 2) extends out from the recess (see, fig. 2).

With respect to claim 10, Hidgon et al. teaches an electrical panel (210), but is silent as to a flexible printed circuit board coupled by means of hot pressure.

Stopperan teaches two rigid boards (75) with flexible jumpers, coupled to an electrical panel (100) by means of hot pressure (see, col. 4, lines 66-68 & co. 5, lines 1-9 of Stopperan).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize hot pressure as taught by Stopperan in the invention of Higdon et al., in order to provide a means of making an electrical connection between an electrical panel and a circuit board which is able to tolerate soldering.

With respect to claim 11, Higdon et al. teaches (see, fig. 2) a side key assembly (122) for a housing (102) of an electronic device, comprising: a key portion (206); a flexible panel (208) having domes formed thereon and corresponding to the key portion (206); and a printed circuit board (257), having conducting tracks (263) formed thereon; wherein the flexible panel (208) is arranged between the key portion (206) and an electrical panel (210) coupled to a circuit track (236) and each dome corresponds to an end of each conducting track (263) such that when the key portion (206) is depressed, it exerts a force and presses the flexible panel (208), and in responsive this pressure, one of the domes deformed on the flexible panel (208) has a distortion and depresses to the printed circuit board (257) to actuate the conducting tracks (263) on the printed circuit board (257), but is silent as to specifically a flexible printed circuit board having tracks.

Stopperan teaches two rigid boards (75) comprising flexible jumpers, coupled to an electrical panel (100).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the flexible board of Stopperan in the invention of Hidgon et al., in order to provide an alternate equivalent means of electrical connectivity between the two rigid panels (210) and (257) of Hidgon et al. over the elements (246-250) of Hidgon et al.

With respect to claim 12, Higdon et al. teaches the housing (102), which further comprise a side wall (274), the side key assembly (122) engages with the side wall (274).

With respect to claim 13, Higdon et al. teaches a side key assembly (122) and a conducting track (236), which electrically contacts with the conducting tracks (263) formed on the printed circuit board (257) and

the conducting track or traces (236) coupled to the electrical panel (210), but is silent as to a flexible printed circuit board comprising conducting tracks.

Stopperan teaches two rigid boards (75) comprising flexible jumpers coupled with an electrical panel (100).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the boards of Stopperan in the invention of Hidgon et al., in order to provide an alternate equivalent means of electrical connectivity between the two rigid panels (210) and (257) of Hidgon et al. over the elements (246-250) of Hidgon et al.

With respect to claim 14, Higdon et al. teaches the circuit tracks (236), but is silent as to the electrical panel (210) being coupled to a flexible printed circuit board by means of hot pressure.

Stopperan teaches two rigid boards (75) comprising flexible jumpers, coupled to an electrical panel (100).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the boards of Stopperan in the invention of Hidgon et al., in order to provide an alternate equivalent means of electrical connectivity between the two rigid panels (210) and (257) of Hidgon et al. over the elements (246-250) of Hidgon et al.

With respect to claim 15, Higdon et al. teaches the key portion (206), which comprises a body portion (not labeled), a user interface (see, fig. 2) extending from the body portion (see, fig. 2), and a contact portion (not labeled) extending from one inner side of the user interface (see, fig. 2).

With respect to claim 16, Higdon et al. teaches the side wall (274), which further comprises a plurality of stop walls (see, fig. 2), and a receiving space (not labeled) formed therebetween.

With respect to claim 17, Higdon et al. teaches a stop wall, which is in a "L" shape, and comprises a long arm (see, fig. 2) and a short arm (see, fig. 2), the long arm (see, fig. 2) is parallel to the side wall (274), and the short arm (see, fig. 2) extends from a bottom wall of the housing (102) and near to the side wall (274).

With respect to claim 18, Higdon et al. teaches the side wall (274), which has a recess which responds with the stop wall, and a width of the recess is shorter than a distance of the two short arms.

With respect 19, Higdon et al. teaches the key portion (206), the flexible panel (210) and the electrical panel (210), which are placed in the receiving space (see, fig. 2), the side wall blocks the body portion of the key portion (206) and the user interface extends out the recess.

With respect to claim 22, Higdon et al. teaches an electronic device (see, Abstract of Higdon et al.) comprising a housing assembly (102) comprising a side wall (274); a printed circuit board (257) mounted in the housing assembly (102), and a side key assembly (122) engaged with the side wall (274), and comprising: a key portion (206); a flexible panel (208) substantially abutting against the key portion (206); and a printed circuit board (257) having conducting tracks (263) formed thereon; wherein the

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flexible panel (208) is arranged between the key portion (206) and the printed circuit board (257) such that when the key portion (206) is depressed, it exerts a force and presses the flexible panel (208) in response to this pressure the flexible panel (208) deforms generally toward the printed circuit board (257) to actuate at least one of the conducting tracks (263) on the printed circuit board (257) and a circuit track or trace (236) coupled to an electrical panel (210), but is silent as to specifically a flexible printed circuit board having tracks.

Stopperan teaches two rigid boards (75) comprising flexible jumpers, coupled to an electrical panel (100).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the boards of Stopperan in the invention of Hidgon et al., in order to provide an alternate equivalent means of electrical connectivity between the two rigid panels (210) and (257) of Hidgon et al. over the elements (246-250) of Hidgon et al.

With respect to claim 23, Higdon et al. teaches a flexible panel (208), which is metallic, and said printed circuit board (257) is further connected to an electrical panel (210) which is engaged with said metallic flexible panel (208) (see, col. 3, lines 36-42).

Response to Arguments

2. Applicant's arguments, filed 5/17/06, have been fully considered but they are not persuasive and are moot in view of the new grounds of rejection.

With respect to Applicant's argument regarding substrate (257) of Higdon et al. not being a printed circuit board, the Examiner respectfully disagrees and notes that substrate (257) is made out of a printed circuit board (see, also col. 4, lines 22-24 of Higdon et al.).

With respect to Applicant's argument regarding, Higdon et al. not providing a flexible printed circuit board having tracks, the Examiner notes that although Higdon et al. does not specifically state that the electrical panel (210) comprises a flexible printed circuit board but comprises circuit tracks or traces (236). It is also noted that Stopperan is relied upon to teach two rigid boards (75) comprising flexible jumpers, coupled to an electrical panel (100). The elements (246-250) of Higdon et al. can be replaced with the rigid panels (75) and flexible jumpers of Stopperan, as an alternate means of providing electrical connectivity, between the electrical panel (210) & printed circuit board (257) of Higdon et al.

With respect to Applicant's argument, regarding the contact pads (204) abutting contact arms (202) to electrically connect the substrate (257), the Examiner respectfully disagrees and notes that the contact arms (202) are coupled to an edge of the electrical panel (210) which comprises a circuit track (236). board. When the key portion (206) is depressed, a dome on the flexible panel (208) abuts the electrical panel (210) comprising the contact arms (202) and further allows an electrical connectivity with the printed circuit board (257).

3. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing

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date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

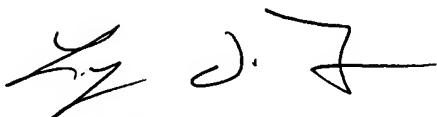
Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Kotaka US 3911234 shows the general state of the art regarding electronic devices with key assembly configurations.
5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ingrid Wright whose telephone number is (571)272-8392. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynn Feild can be reached on (571)272-2800, ext 35. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

IDW


LYNN FEILD
SUPERVISOR
SUPERVISOR - PATENT EXAMINER

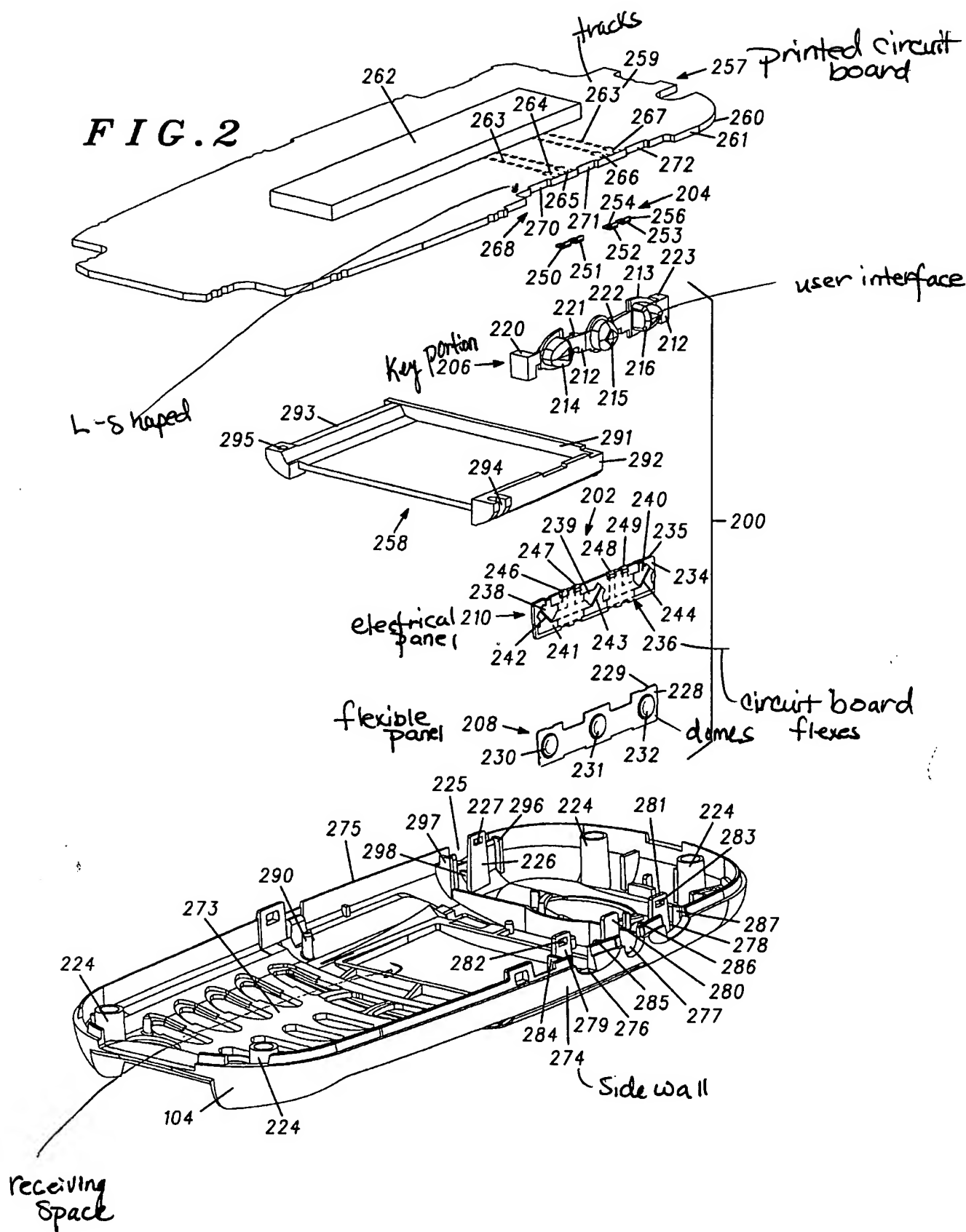


FIG. 5